Does Mandibular Distraction Vector Influence the Rate of Temporomandibular Joint Ankylosis?

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INTRODUCTION: Since its advent by McCarthy et al[1] in 1992, mandibular distraction has become the primary choice for the treatment of patients with moderate to severe Robin sequence.[2] Based on the Ilizarov principle of bone lengthening,[3] mandibular distraction relieves airway obstruction by lengthening the mandible. Despite its effectiveness, a potential yet problematic complication of mandibular distraction is temporomandibular joint (TMJ) ankylosis. Previous studies report TMJ ankylosis rates of up to 10%,[4] whereas other studies have shown virtually no incidences of TMJ sequelae.[5] A theory on this difference relates to distraction vector; a vertical vector is more likely to lead to TMJ ankylosis because of the cranially directed pressure withstood by the TMJ during activation, as compared to horizontally or obliquely directed vector. Historically, our center has used a vertical distraction vector with a more recent conversion to an obliquely oriented vector. The purpose of this presentation is to discern if there is difference in rates of TMJ ankylosis between vertical and oblique distraction groups.

METHODS: After Institutional Review Board approval, a retrospective chart review was performed of all patients who underwent mandibular distraction at Children's Mercy Hospital from 1997 to 2015. All operations were performed by 3 surgeons. Ankylosis rates were compared between the 2 groups.

RESULTS: Ninety-four patients were reviewed. The average age of presentation was 103 days. Seventy underwent vertical distraction, whereas 24 underwent oblique distraction. TMJ ankylosis was recorded in 12 cases, all in the vertical vector group, a 17% rate of ankylosis. There were no cases of ankylosis in the oblique vector group. The average age at diagnosis of TMJ ankylosis was 6.5 years. When excluding all syndromic patients in both groups, 48 patients remained. Thirty-four underwent vertical distraction versus 12 for the oblique group. There still was a 12% rate of ankylosis, all in the vertical group.

CONCLUSION: Vertical mandibular distraction carries a significantly increased risk of TMJ ankylosis and should be avoided.

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Migraine Surgery Is an Effective Treatment and a Financially Valuable Procedure

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PURPOSE: As the landscape of systems-based healthcare continues to change, a greater financial emphasis is being placed on the way care is provided. From a business standpoint, costs should be minimized, whereas profits are to be maximized. However, these tenets do not always align with delivery of optimal care. We sought to demonstrate that migraine surgery at The University of Wisconsin is both effective and financially beneficial to the hospital system.

METHODS: A 5-year (2013–2017) retrospective analysis of 197 patients who underwent migraine surgery at The University of Wisconsin – Madison was performed. Preoperative and postoperative migraine headache index scores were calculated. The surgical setting (outpatient versus inpatient) of the procedure was analyzed along with direct and indirect costs. Revenue and cost data were used to calculate a net profit margin.

RESULTS: Patient migraine headache index demonstrated a reduction in scores from 193.7 preoperatively to 48.8 postoperatively (mean reduction, 74.8%; $P < 0.0001$). Ninety-one percent (n = 179) of cases were performed as outpatient procedures. Mean direct and indirect costs were $4,702.47 and $2,954.62, respectively.